

Date: Sat, 23 Apr 94 04:30:14 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V94 #116  
To: Ham-Ant

Ham-Ant Digest                      Sat, 23 Apr 94                      Volume 94 : Issue 116

Today's Topics:

                    2m/70cm on a Honda.. Which One?  
                    Best city antenna  
                    Calling all balun experts  
Formula for determining optimum distance between elements in a Yagi beam (2 msgs)  
                    groundplane antenna for 157.32125mhz  
                    Is this too crazy to work!!??  
                    Listening to shortwave in car  
                    Slot antennas on cars?  
Thanks to all who responded to Yagi element spacing question  
                    Through-the-window on a Saturn  
                    What are good propagation/DX programs?  
                    Will this work??

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.  
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Date: Thu, 21 Apr 1994 16:27:53 GMT  
From: ihnp4.ucsd.edu!galaxy.ucr.edu!library.ucla.edu!europa.eng.gtefsd.com!  
news.umbc.edu!eff!news.kei.com!world!dts@network.ucsd.edu  
Subject: 2m/70cm on a Honda.. Which One?  
To: ham-ant@ucsd.edu

In article <1994Apr20.233638.5030@ccc.amdahl.com> dws30@p1dbg02cd.amdahl.com  
(David Sharpe) writes:  
>Rumor has is keying up with some rigs will kill the computer in the car.  
>I would like to know if this would be a problem with a 89 Accord. I  
>would also like to know what 2m/70cm antenna and mounting seems to work

$\gamma$ 

Experience with Hondas seems to indicate that you won't hurt the computer in the car. The car, however, may radiate a LOT of noise into your antenna, and from there into the radio. Some hondas are rolling wide-band RF noise sources. (Our 88 honda has this problem, and many others have reported the same problem).

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The Amidon voltage balun had a "solid" feel when tuning. I have an MFJ-949E

tuner and the SWR would not go below 1.4/1 but it was steady and stable there. The MFJ current balun would go down to 1/1 but it wouldn't stay there. It didn't deviate much, but crept up to about 1.1/1 and didn't have the "solid" feel of the Amidon balun.

What does it all mean? My best WAG (wild ass guess) is that the Amidon balun is doing a 4:1 transformation and the MFJ is not. The MFJ is doing an X:1 transformation where X changes when the wind blows but the losses in either balun are not enough to heat either one up (and therefore negligible?) A received signal was the same signal strength either way which tells me that there is an impedance difference, not a power difference.

So the plot thickens... at certain impedences the MFJ current balun appears to change from 4:1 to something else... 3:1? 5:1?... The Amidon voltage balun doesn't seem to care about the wind. A barely saturating balun might not heat up but might change impedences rather dramatically.

Unless I see evidence to the contrary, I'm going to assume that Jerry Savek knows what he is talking about and that super husky voltage baluns are superior to current baluns... anybody care to comment?

slowly going crazy... KG7BK, CecilMoore@delphi.com

[A

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Date: Thu, 21 Apr 1994 00:05:49 GMT

From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!wupost!waikato!canterbury.ac.nz!news@network.ucsd.edu

Subject: Formula for determining optimum distance between elements in a Yagi beam

To: ham-ant@ucsd.edu

In article <CoIM2v.3qC@fc.hp.com> Jay Kesterson K0GU, jayk@fc.hp.com writes:

>In article <gsladic.22.00163013@mcs.com> gsladic@mcs.com writes:

>: >Is there a formula for determining the optimum distances between the driven

>: >element and the parasitic elements in a yagi beam?

>: >

>: >I know the driven element should be a 1/2 wavelength and the reflector 5%

>: >longer and the director 5% shorter in a 3 element beam. How do I determine

>: >the distance between the driven element and the parasitic elements? What

>: >about if the yagi has more than 3 elements, say 7?

You should get a copy of the NBS paper called YAGI ANTENNA DESIGN

issued back in Dec. 1976 by Peter P. Viezbicke. It's good reading and has lots of design info derived from experimentation, I use it all the time, takes a bit of working out but the effort is worth it. Also the mag. VHF Communations has good info on long Yagi design from time to time...

\*\*\*\*\*  
Roger Corbett Phone  
64-03-3642257  
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64-03-3642418  
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R.Corbett@csc.canterbury.ac.nz  
New Zealand Radio  
ZL3THQ  
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Date: Thu, 21 Apr 1994 14:26:03 GMT  
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!  
col.hp.com!fc.hp.com!jayk@network.ucsd.edu  
Subject: Formula for determining optimum distance between elements in a Yagi beam  
To: ham-ant@ucsd.edu

Roger Corbett (R.Corbett@csc.canterbury.ac.nz) wrote:  
: You should get a copy of the NBS paper called YAGI ANTENNA DESIGN  
: issued back in Dec. 1976 by Peter P. Viezbicke. It's good reading and  
: has lots of design info derived from experimentation, I use it all the  
: time, takes a bit of working out but the effort is worth it.

Viezbicke's papers on yagi antennas do supply a lot of good data. However the state-of-the-art has improved quite a bit in the last 18 years. There are newer more efficient designs available.

73, Jay K0GU jayk@fc.hp.com

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Date: Wed, 20 Apr 1994 16:38:18 GMT  
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!emory!rsiatl!ke4zv!  
gary@network.ucsd.edu  
Subject: groundplane antenna for 157.32125mhz  
To: ham-ant@ucsd.edu

In article <CoHKHC.EEJ@rahul.net> mlyon@rahul.net (Mike Lyon) writes:  
>i have a scanner that i would like to build a groundplane antenna for. i  
>took the bottom part of the freq range and added it to the top part of

>the freq range and averaged it and came up with the above posted freq.  
>all i need to know is what is the formula to figure out the lengths of  
>the poles that point downwards and upwards?

The wavelength formula is  $300/\text{MHz}$  for a free space wavelength. Divide the number by 4 to get the quarter wavelength dimension you need. For the frequency you list, it would be about 0.476 meter. Now because of end effect, the free space number will be about 5% too long, giving a final value of about 18 inches, but that's OK because you're taking the wrong approach to cutting a scanner antenna for the VHF HI band.

Receiving antennas work pretty well *above* the frequency for which they are cut, but don't work at all well for frequencies *below* the frequency for which they are cut. So you want to cut the antenna to favor the lower part of the frequency range you wish to monitor. And for a wide receiving range, a discone design works better than a groundplane. For your case, a disc of 23 inches diameter over a cone 28 inches high by 32 inches across the base should work nicely. Like so,



The center conductor of the coax goes to the disk, and the shield goes to the cone. Both disk and cone can be made of rod stock, about 8 rods for disc and 8 more for cone should be about right. Make the disc rods 10.5 inches, and the cone rods 32 inches, each measured from tip to the feedpoint at the hub. Note: Radio Shack sells a discone like this made from stainless steel, very nice for scanner reception.

Gary

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Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Wed, 20 Apr 1994 16:53:15 GMT  
From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!swrinde!emory!kd4nc!ke4zv!  
gary@network.ucsd.edu  
Subject: Is this too crazy to work!??  
To: ham-ant@ucsd.edu

In article <2p22p5\$rl3@vixen.cso.uiuc.edu> bpea@prairienet.org (Bruce Pea) writes:  
>

>I'd like to thank everyone who took the time to send me comments  
>on my chicken wire counterpoise question. Now I've got another  
>question.

>  
>I'm thinking of building a half-wave helically <sp> wound 160m  
>vertical to stick on top of my three story house. Can I use my  
>water pipes in the house as my counterpoise? What if I attached  
>ground wires to the pipes and ran them out in the yard and around  
>the house, would that help even more?

Yes, the more contact with Earth you can arrange, and as far out  
from the antenna base as you can arrange it, the better.

>Does having the antenna three stories above the counterpoise make  
>any difference? Is this too crazy to work? Is my ignorance obvious?  
>Can you tell I JUST got my ticket and I'm going nuts trying to  
>figure out what to put up :-)

Yes, yes, and yes. :-)

If you're going to do this, wind the helical halfwave about 36 feet  
short and run a wire down through your house to ground level where  
you can feed it directly against your ground connection. Since the  
design will then be top loaded, most of the radiation will come from  
the part of the antenna above the house, but your current mirror in  
the Earth will be correct and symmetric. You don't want to feed it  
at roof level and then run a ground connection down to Earth. That'll  
be very asymmetric and inefficient.

Note: if you run much power, be prepared for your house lighting to  
follow modulation, and for RFI problems with all your consumer  
electronics. You're going to have a rather high RF field enveloping  
the house. A loaded tower in the backyard would be better.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: 21 Apr 94 23:54:06 GMT

From: agate!howland.reston.ans.net!europa.eng.gtefsd.com!news.ans.net!

hp81.prod.aol.net!search01.news.aol.com!not-for-mail@uchvax.berkeley.edu

Subject: Listening to shortwave in car  
To: ham-ant@ucsd.edu

I was wondering what I could do to improve reception of shortwave in my car. I heard the Grove No-antenna is not worth it. I now am able to directly connect my radio to my am/fm radio antenna. It helps, but I'm sure I could do better. I was thinking about a CB antenna with a capacitor to make it more useful for the shortwave freq. range. Any ideas or suggestions on how to add this cap?

Hollis  
Hollis113@aol.com

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Date: Tue, 19 Apr 1994 13:07:51 -0400  
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!news.acns.nwu.edu!ftpbbox!mothost!  
lmpsbbs!NewsWatcher!user@network.ucsd.edu  
Subject: Slot antennas on cars?  
To: ham-ant@ucsd.edu

In article <CoGysK.7rt@hpcvsnz.cv.hp.com>, tomb@lsid.hp.com (Tom Bruhns)  
wrote:

> Has anyone out there experimented with slot antennas on cars? There are  
> several places you could make this work, but I was thinking of a slot  
> formed from wire (or copper tape) placed at the top inside of the rear  
> window. If anyone has experimented with this, I'd be interested in  
> the results: impressions about performance transmitting and receiving,  
> amount of RF in the passenger compartment, problems feeding the  
> antenna, ... It seems like the dimensions are right for this to work  
> as a "stealth" antenna on 2m and 440MHz, with vertical polarization.  
>  
> 73, K7ITM

It has indeed been done, not just by amateurs but also commercially. Antenna SPecialists offered a unit fit into a rear speaker cutout which would easily handle 100W on UHF, and others have done similar tricks on 800-1000 MHz. Several of the alphabet agencies utilize these types of antennae in their undercover operations vehicles, making them visually undetectable.

They still radiate some potent RF signals from 130 MHz up.

The present marketing concern is for occupants of the rear seat, who may be subjected to significantly higher levels of EMR and H-fields than the new OSHA/EPA regulations will allow. Secondarily, the defogger grids and now the new conductive windshields present major obstacles to RF and thus to the widespread use of such antenna designs for two-way operation.

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Karl Beckman, P.E. < STUPIDITY is an elemental force for which >  
Motorola Comm - Fixed Data < no earthquake is a match. -- Karl Kraus >

The statements and opinions expressed here are not those of Motorola Inc.  
Motorola paid a marketing firm a huge sum of money to get their opinions;  
they have made it clear that they do not wish to share those of employees.

Amateur radio WA8NVW @ K8MR.NEOH.USA.NA

NavyMARS VBH @ NOGBN.NOASI

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Date: Thu, 21 Apr 1994 13:15:16  
From: ihnp4.ucsd.edu!swrinde!emory!europa.eng.gtefsd.com!news.umbc.edu!eff!  
news.kei.com!ddsw1!elink.pr.mcs.net!gsladic@network.ucsd.edu  
Subject: Thanks to all who responded to Yagi element spacing question  
To: ham-ant@ucsd.edu

My thanks to all of you who responded to my question regarding the optimum  
spacing of elements is a Yagi beam. I have read all of your responses and  
plan to follow up on recommendations and suggestions for further reading. When  
I build the antenna and get it set up and working properly, I'll post an  
update on this newsgroup about my results. Once again, thanks all.

George Sladic

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E-mail: gsladic@mcs.com  
Ham Call: <pending>

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Date: Wed, 20 Apr 1994 16:41:51 GMT  
From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!swrinde!emory!kd4nc!ke4zv!  
gary@network.ucsd.edu  
Subject: Through-the-window on a Saturn  
To: ham-ant@ucsd.edu

In article <2ov1qf\$g97@rcp6.elan.af.mil> edsko@ada1.elan.af.mil (Ed Skochinski)  
writes:

>

>Are there any Saturn owners out there who have addressed the problem? If  
>I mount the antenna on top of the tinting, will this severely impact the  
>antenna performance? What if I lower the antenna and have it span one of  
>the rear defroster veins? Is there some strong solvent which will remove  
>the tinting?



The tint is metalized, so the thru-glass antenna won't couple properly. The defroster wires are also metal, and will disturb the thru-glass coupling, not that plain glass would be much better mind you, thru-glass antennas just don't work that well. Drill the hole!

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: 21 Apr 1994 14:35:12 GMT  
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!xlink.net!news.urz.uni-heidelberg.de!rz.uni-karlsruhe.de!news.uni-stuttgart.de!smiller@network.ucsd.edu  
Subject: What are good propagation/DX programs?  
To: ham-ant@ucsd.edu

What's a good HF propagation forecast program for DOS? (Something that gives you charts like you see in the ham magazines.) I was thinking that if I had such a program and entered in current raw data myself, I'd get more accurate charts.

While I'm at it, do you know of a DOS program that will print out a great circle map based on any coordinates (such as my QTH)?

Please email and I'll post a follow-up if there's interest.

Many thanks & 73,

--Shannon, DL6SEU/N7APC  
smiller@rus.uni-stuttgart.de

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Date: 22 Apr 94 14:43:04 GMT  
From: agate!howland.reston.ans.net!noc.near.net!mv!mv.mv.com!  
tetrault@ucbvax.berkeley.edu  
Subject: Will this work??  
To: ham-ant@ucsd.edu

To: bpea@prairienet.org

In a recent message, you wrote;

>>. My question is, instead of running 100+ individual  
>>ground wires out from the base of the vertical, can I lay  
>>varying lengths of chicken wire out??  
>>  
>>Will the chicken wire be a better ground plane than the individual  
>>wires??

According to my sources random wires approaching 1/2 wave length for the operating freq of the verticle is best. However that being said, chicken wire will work. Bury it an inch or so under the ground and use as much as possible.

In retrospect, I run a Butternut HF2V for 40 and 80 here and have probably 400' of ground wire laid out in random lengths and few are the 32' i/2 wl of 40m. Yet, the antenna gives me that tiny edge in a crowded band over my G5RV when that choice piece of DX arrives.

Go with the most you can, the more the better.

Mark

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\* UniQWK v3.3 \* The Windows Mail Reader

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| Mark D. Tetrault      | tetrault@mv.mv.com      |  
| 6 Colonial Drive     | 1:132/169@fidonet.org  |  
| Pembroke, NH 03275   | n1men.ampr.org_44.52.7.8 |  
| (603) 485-5852       | Have a Nice Day!       |  
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End of Ham-Ant Digest V94 #116

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